

**NOTE TO PTO PERSONNEL:**  
**THIS PATENT APPLICATION IS BEING**  
**FILED WITH SMALL ENTITY STATUS**

# **TERMINAL FOR ELECTRIC CONNECTOR FOR COMMUNICATION APPARATUS**

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention:**

5           The present invention relates to a terminal for electric connector for communication and, more particularly, to such a terminal that easily positively be positioned in the connector housing for signal transmission without producing much impedance.

### **10   2. Description of the Related Art:**

          Communication apparatus are important implement for communication among people at distance. Advanced communication apparatus commonly have a small size with high transmission power. For a compact communication apparatus, the  
15   component parts and terminals must be made relatively smaller. FIG. 1 shows a terminal for electric connector for communication apparatus according to the prior art. According to this design, the terminal, referenced by 100, is stamped from a metal sheet member, comprising a protruding contact portion 102 disposed at one end, a  
20   mounting plate portion 10 disposed at the other end, a spring coil portion 101 connected between the protruding contact portion 102 and the mounting plate portion 10, a bonding tip 10b extended from the bottom side of the mounting plate portion 10 for soldering to a

circuit board, and two hooks **10a** protruding from two opposite lateral sides of the mounting plate portion **10**. During installation, the terminal **100** is inserted into the receiving chamber **21** of an electrically insulative housing **20** for electric connector to force the hooks **10a** into engagement with the inside wall of the housing **20** (see FIG. 1A). When installed, the protruding contact portion **102** extends out of the front opening of the housing **20** for contact. This design of terminal **100** for electric connector is still not satisfactory in function. Due to weak structural strength, the terminal **100** tends to be permanently deformed or damaged during installation of the electric connector (see FIG. 1B).

FIG. 2 shows another structure of terminal for electric connector according to the prior art. This design of terminal is similar to that shown in FIG. 1 with the exception of the two additional parallel side guide strips **103** that are bilaterally extended from the top side of the mounting plate portion **10** in direction reversed to the bonding tip **10b** and spaced from the spring coil portion **101** at two sides. This structure of terminal is still not satisfactory in function because the protruding contact portion **102** tends to be biased, affecting signal transmission quality. Further, in order to reduce impedance produced during signal transmission, beryllium copper is used for making the terminal. However, a terminal of beryllium copper is relatively expensive.

Therefore, it is desirable to provide a terminal for electric connector for communication apparatus that eliminates the drawbacks of the aforesaid prior art designs.

### **SUMMARY OF THE INVENTION**

5           The present invention has been accomplished under the circumstances in view. It is the main object of the present invention to provide a terminal for electric connector for communication apparatus, which is durable in use. It is another object of the present invention to provide a terminal for electric connector for  
10 communication apparatus, which has low impedance. It is another object of the present invention to provide a terminal for electric connector for communication apparatus, which is inexpensive to manufacture. To achieve these and other objects of the present invention, the terminal is directly stamped from a phosphor bronze  
15 sheet member, having protruding contact portion disposed at one end, a mounting plate portion disposed at the other end, and two spring coil portions symmetrically bilaterally supported between the protruding contact portion and the mounting plate portion.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

20           FIG. 1 is a plain view of a terminal for electric connector for communication apparatus according to the prior art.

          FIG. 1A illustrates the terminal of FIG. 1 installed in an electrically insulative housing.

FIG. 1B is similar to FIG. 1A but showing the protruding contact portion biased.

FIG. 2 is a plain view of a terminal for electric connector for communication apparatus according to the prior art.

5        FIG. 2A illustrates the terminal of FIG. 2 installed in an electrically insulative housing.

FIG. 2B is similar to FIG. 2A but showing the protruding contact portion biased.

FIG. 3 is a plain view of a terminal for electric connector  
10    for communication apparatus according to the present invention.

FIG. 4 illustrates the terminal installed in an electrically insulative housing according to the present invention.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to FIG. 3, a terminal **300** for electric connector  
15    for communication apparatus in accordance with the first embodiment of the present invention is shown comprising a protruding contact portion **35** disposed at one end, a mounting plate portion **30** disposed at the other end, two spring coil portions **34** symmetrically bilaterally connected between the protruding contact  
20    portion **35** and the mounting plate portion **30**, a bonding tip **31** extended from the bottom side of the mounting plate portion **30** for soldering to a circuit board, two hooks **33** protruding from two opposite lateral sides of the mounting plate portion **30**, and two

springy retaining strips 32 protruded from the mounting plate portion 30 and spaced between the hooks 33.

Referring to FIG. 4, the terminal 300 is inserted into the receiving chamber 21 of an electrically insulative housing 20 for electric connector to force the springy retaining strips 32 and the hooks 33 into engagement with the inside wall of the housing 20. When installed, the protruding contact portion 35 extends out of the front side of the housing 20, and the two spring coil portions 34 keep the protruding contact portion 35 in balance. Therefore, the use of the electric connector does not cause the protruding contact portion 35 to bias. Further, the terminal 300 is directly stamped from a phosphor bronze sheet member for the advantages of low impedance and low cost.

A prototype of terminal for electric connector has been constructed with the features of FIGS. 3 and 4. The terminal for electric connector functions smoothly to provide all of the features discussed earlier.

Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.